UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST-NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,267	10/01/2001	Kiyoaki Murai	110750	4174

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2002* .

2a)☐ This action is **FINAL**.　2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-17* is/are allowed.

6)☒ Claim(s) *1,2,5 and 18-22* is/are rejected.

7)☒ Claim(s) *3,4 and 6-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

　　If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☒ All b)☐ Some * c)☐ None of:

　　　　1.☒ Certified copies of the priority documents have been received.

　　　　2.☐ Certified copies of the priority documents have been received in Application No. _____ .

　　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

　　a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1, 2, 5, and 18-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsushiro et al. (6,201,612).

With regard to claim 1 Matsushiro et al. teaches an image processing method, comprising: inputting data indicating a grayscale of a pixel (figure 5, "MULTI-LEVEL IMAGE" , into item 7); converting said input data into grayscale data which specifies a grayscale of an image output apparatus according to predetermined characteristics (figure 5, item 8, SELECTOR); and when said input data corresponds to a specific grayscale value which causes a defect in an output of said image output apparatus (ABSTRACT) converting at least part of said input data into grayscale data which specifies a grayscale value other than the specific grayscale value, and supplying the converted grayscale data to said image output apparatus (figure 5, the selector picks item 21 or item 11 then output BI-LEVEL IMAGE).

With regard to claim 2. Matsushiro et al. teaches an image processing method according to claim 1, said converting further comprising a color reduction processing

that reduces the number of levels which is indicatable by said input data into the

number of levels which is indicatable by said grayscale data (column 1, lines 5-24).

With regard to claim 5. Matsushiro et al. teaches an image processing method,

comprising: inputting data which indicates a grayscale of a pixel (figure 5, "MULTI-

LEVEL IMAGE" , into item 7); and converting said input data into grayscale data which

specifies a grayscale of an image output apparatus by reducing the number of levels of

said input data according to predetermined characteristics(figure 5, item 8, SELECTOR

column 1, lines 5-10);   and by performing pseudo-halftone processing that displays a

halftone, in which, when said input data corresponds to a specific grayscale value which

causes a defect in an output of said image output apparatus (ABSTRACT), at least part

of said input data is converted into grayscale data which specifies one of grayscale

values adjacent to said specific grayscale value, and supplying the converted data to

said image output apparatus apparatus (figure 5, the selector picks item 21 or item 11

then output BI-LEVEL IMAGE).

With regard to claim 18 Matsushiro et al. teaches an image processing

apparatus, comprising: a conversion circuit that converts data indicating a grayscale of

a pixel into grayscale data which specifies a grayscale of an image output apparatus

according to predetermined characteristics (figure 5), wherein, when said input data

corresponds to a specific grayscale value which causes a defect in an output of said

image output apparatus (abstract), said conversion circuit converts at least part of said

input data into grayscale data which specifies a grayscale value other than the specific

grayscale value, and supplies the converted grayscale data to said image output

apparatus (figure 5, the selector picks item 21 or item 11 then output BI-LEVEL

IMAGE).

With regard to claim 19 Matsushiro et al. teaches an image processing

apparatus, comprising: a conversion circuit that converts data indicating a grayscale of

a pixel into grayscale data which specifies a grayscale of an image output apparatus by

reducing the number of levels of said input data according to predetermined

characteristics (figure 5), and by performing pseudo-halftone processing for displaying a

halftone, wherein said conversion circuit converts at least part of the data corresponding

to a specific grayscale value which causes a defect in an output of said image output

apparatus into grayscale data which specifies one of grayscale values adjacent to said

specific grayscale value, and supplies the converted data to said image output

apparatus (figure 5, the selector picks item 21 or item 11 then output BI-LEVEL

IMAGE).

With regard to claim 20 Matsushiro et al. teaches an electronic device,

comprising: an image processing apparatus and an image output apparatus (figure 5),

said image processing apparatus converting data indicating a grayscale of a pixel into

grayscale data which specifies a grayscale of said image output apparatus by reducing

the number of levels of said input data according to predetermined characteristics and

by performing pseudo-halftone processing for displaying a halftone (abstract, and

column 1, lines 6-24), said image processing apparatus comprising a conversion circuit

that converts at least part of the input data corresponding to a specific grayscale value

which causes a defect in an output of said image output apparatus (abstract) into the
grayscale data which specifies one of grayscale values adjacent to said specific
grayscale value, and said image forming apparatus outputting an image according to
the grayscale data converted by said image processing apparatus (figure 5, the selector
picks item 21 or item 11 then output BI-LEVEL IMAGE).

With regard to claim 21 Matsushiro et al. teaches an image processing program
which causes a computer (column 2, lines 50-55) that supplies grayscale data which
specifies a grayscale of an image output apparatus to said image output apparatus to
function as device that indicates a grayscale of a pixel into said grayscale data by
reducing the number of levels of the input data according to predetermined
characteristics and by performing pseudo-halftone processing for displaying a halftone
(abstract, column 1, lines 1-25), wherein the device converts at least part of the data
corresponding to a specific grayscale value which causes a defect in an output of said
image output apparatus into the grayscale data which specifies one of grayscale values
adjacent to said specific grayscale value, and supplies the converted grayscale data to
said image output apparatus (figure 5, the selector picks item 21 or item 11 then output
BI-LEVEL IMAGE).

With regard to claim 22 Matsushiro et al. teaches (Amended) A computer-
readable recording medium on which an image processing program is recorded
(column 2, lines 50-55), said image processing program causing a computer for
supplying grayscale data which specifies a grayscale of an image output apparatus to
said image output apparatus to function as device that indicates a grayscale of a pixel

into said grayscale data by reducing the number of levels of the input data according to predetermined characteristics and by performing pseudo-halftone processing for displaying a halftone (column 1, lines 5-25), wherein the device converts at least part of the data corresponding to a specific grayscale value which causes a defect in an output of said image output apparatus into the grayscale data which specifies one of grayscale values adjacent to said specific grayscale value, and supplies the scale data to said image output apparatus (figure 5, the selector picks item 21 or item 11 then output BI-LEVEL IMAGE).

Allowable Subject Matter

3.   Claims 3, 4, and 6-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4.   Claims 11-17 are allowed.

5.   The following is a statement of reasons for the indication of allowable subject matter: with regard to claims 11-22 none of the prior art made of record teach or suggest the feature identified below for each independent claim in combination with all the other limitations of the claim.

With regard to claim 11 the feature, "selecting a dither value according to coordinates of said pixel from a predetermined dither matrix for pseudo-halftone processing".

With regard to claim 13 the feature, "when a result of said determination is yes, adding a doubled value of said dither value and a value according to said color reduction to said input data so as to convert said input data into data which specifies one of grayscale values adjacent to said specific grayscale value according to the addition result".

With regard to claim 15 the feature "pre-processing compresses a range from a center value corresponding to one of grayscale values adjacent to a specific grayscale value which causes a defect in an output of said image output apparatus to a center value corresponding to the other adjacent grayscale value into a range from the center value corresponding to one of the grayscale values adjacent to said specific grayscale value to a center value corresponding to said specific grayscale value".

With regard to claim 16 the feature "pre-processing compresses a range from a center value corresponding to one of grayscale values adjacent to a specific grayscale value which causes a defect in an output of said image output apparatus to a center value corresponding to the other adjacent grayscale value into a range from the center value corresponding to one of the grayscale values adjacent to said specific grayscale value to a center value corresponding to said specific grayscale value".

With regard to claim 17 the feature, "pre-processing compresses a range from a center value corresponding to one of grayscale values adjacent to a specific grayscale value which causes a defect in an output of said image output apparatus to a center value corresponding to the other adjacent grayscale value into a range from the center value corresponding to one of the grayscale values adjacent to said specific grayscale value to a center value corresponding to said specific grayscale value".

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Bell whose telephone number is (703) 306-3019.

If attempts to reach the examiner by telephone are unsuccessful the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377 can help with any inquiry of a general nature or relating to the status of this application.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or Faxed to: (703) 872-9314 (for Technology Center 2600 only)

Or Hand-delivered to: Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Paul Bell
Art unit 2675
November 3, 2003

CHANH NGUYEN
PRIMARY EXAMINER